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Collaboration between technical writers and technical experts

Kari Beth Miller
San Jose State University

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Collaboration between Technical Writers
and Technical Experts

A Thesis

Presented to

The Faculty Department of Interdisciplinary Studies

San Jose State University

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

by

Kari Beth Miller

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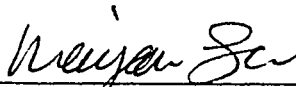
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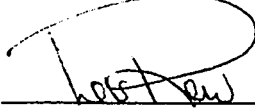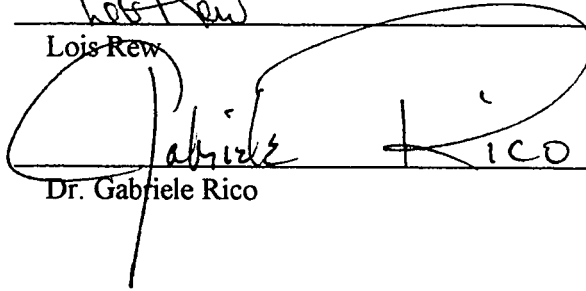
APPROVED FOR THE DEPARTMENT OF ENGLISH

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Dr. Mei-Yan Lu

_____

Lois Rew

_____

Dr. Gabriele Rico

APPROVED FOR THE UNIVERSITY

_____

M. Lou Lewandowski

Abstract

Collaboration between Technical Writers and Technical Experts

by Kari Beth Miller

Collaborative writing between technical writers and subject matter experts is very common in industry. The complex products for which they are writing demand that a technical writer solicit and gather information from technical experts. This study reviews recent research about collaborative writing in industry and presents results from a case study I conducted with technical writers in the computer software industry. The research surrounding this interaction is not extensive. The types, prevalence, and characteristics are covered by only a few scholars. With a case study reflecting today's technical writers in a complex industry, some of the existing research is enhanced and other parts of it are challenged. Writers today do necessarily collaborate with others.

Dedication

This thesis is dedicated to Anthony, for always making me laugh and smile. Thank you for keeping your wonderful sense of humor, for acknowledging all of my efforts, and for giving me something to look forward to when this is finished.

To Jami, for listening, understanding, and sympathizing. I appreciate your enduring encouragement and support.

And to Lois Rew, for sharing your expertise and knowledge of technical writing and for guiding and advising me throughout my years at San Jose State University.

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CHAPTER 1

Why Study Collaborative Writing in Industry?

When I began working as a technical writer for Cadence Design Systems in June of 1994, I had an overwhelming sense of being unprepared and naive. I had studied technical writing at San Jose State University for three semesters, but I still lacked confidence in my skills. Cadence is a software company that develops highly technical tools for engineers. Cadence software is used primarily by engineers who design computer chips. The software helps engineers optimize chip size, layout, design, and performance. While I was obviously unfamiliar with this technical subject, I was equally surprised at how unprepared I was to actually write in this environment, no matter what the subject was.

It is amazing to me that not one course I took in technical writing or editing focused on writing with others. When I began working at Cadence, it became readily apparent that writers *must* collaborate with others in order to understand, articulate, and even discover the technical content of the products for which they write. The engineers (application, research and development, technical marketing, and customer support engineers) hold the majority of information about the products, and writers must tap these resources to produce complete and accurate documentation. As Mary Elizabeth Debs states, "Working with new or complex systems of products, they [technical writers] rely almost exclusively on the product designers for descriptions of the product and how it works" ("Collaborative Writing" 208). Debs further supports the prevalence of collaborative writing in industry when she states that

> Because many documents written within an organization are sponsored, that is, they are meant to represent the company or unit as opposed to the individual alone, it is usually in the best interests of the organization to have this representation verified and, if necessary, altered by other members. Because an

organization is essentially a collaboration, a written document, like anything else produced by a company, is basically a product of collaborative activities (479).

Even with the overwhelming prevalence of collaborative writing in industry, not much research focuses on how employees in different divisions of a company work and write collaboratively. Debs echoes this point when she states that composition scholars have "tended to ignore the fact that many professionals--specifically scientists, engineers, and technical writers--produce their principal documents collaboratively" ("Recent Research on Collaborative Writing" 3). In their article "Collaborative Writing in Industry: An Annotated Bibliography for Teachers and Researchers," Karis and Lay state that since 1985, there has been growing interest in collaborative writing. Their article, written in 1987, states that collaborative writing "has attracted increasing scholarly and pedagogical interest over the last few years" (89). While they claim that interest in and attention to collaborative writing have increased, they still indicate a lack of collaboration in academia when they state that the purpose of their article is to offer "a starting point from which teachers and scholars of technical and business communication may begin research or incorporate exercises in the classroom" (90).

The following research was an attempt to increase my own knowledge about the prevalence, forms, and dynamics of collaborative writing. Looking at early and more recent research in collaborative writing offers a set of standards to which we can compare actual writing in industry and provide insight into the ways to improve collaborate writing. Conducting a case study among writers in the computer industry uncovers the dynamics of writers working collaboratively with others. The subjects' experiences and thoughts give insight into how writers can be most effective in their collaborative efforts.

While there has been more research about writers working collaboratively with editors, I do not address this relationship in my research. The dynamics of collaborating

with individuals outside of the technical publications domain seemed more interesting, undiscovered, and vital to the field of technical writing.

What is Collaborative Writing?

It is important to define what is meant by writing together, or *collaborative writing*. Although I assumed there would seem to be a straight-forward, widely accepted definition of collaborative writing (because of its prevalence in industry), that is not the case. In *Singular Texts/Plural Authors: Perspectives on Collaborative Writing*, Lisa Ede and Andrea Lunsford point out that "The meaning of *collaborative writing* is far from self-evident" (14). Similarly, Janis Forman states in "Collaborative Business Writing" that "with a lack of agreement about the term [collaboration], studies tend to represent diverse commentary on a destabilized concept and processes rather than an agreed upon, cumulative body of knowledge based upon a theoretically unified position" (235).

Without a well-defined, accepted definition, scholars define collaborative writing in many different ways. Ede and Lunsford use a broad definition of collaborative writing that means any writing done with a group. This writing can be "any piece of writing, from notes, directions, and forms to reports and published material" (14). They chose this broad definition in order to conduct their survey by exploring a wide range of interactions and processes. Allen, Atkinson, Morgan, Moore, and Snow define collaboration as people joined in interactive writing "producing a shared document, engaging in substantive interaction about that document, and sharing decision-making power and responsibility for it" (70). Couture and Rymer define collaboration as "discourse interactions" which means "oral or written communication pertaining to a document during the process of planning,

drafting, and revising" (*Collaborative Writing in Industry* 87). Peter Elbow, who is often recognized as a pioneer in promoting collaboration among writers, thinks of collaboration in the revision stages of writing. Ede and Lunsford state that "For years, Peter Elbow has encouraged writers to work in groups, reading their work aloud for oral responses, out of which revisions grow" (113).

For the purposes of my research and observations, I define collaboration as *a group of two or more people working together to create a document. Even if one person does all the writing, another supplies the technical information, and another reviews the document, all three of these individuals have collaborated to produce the document. The final form of the document, whatever form it takes, represents the work and efforts of all those who contributed to its content.*

CHAPTER 2

What Does Research in Collaborative Writing Offer?

With a brief background in collaborative writing and a definition from which to expand, the following section presents research relevant to collaborative writing in industry. Each of the following scholars provides a slightly different angle on collaborative writing, shedding light on unexplored areas.

Kenneth Bruffee: An Early Look at Collaboration

Nearly 80 percent of researchers in collaborative writing refer to Kenneth Bruffee as the forerunner and earliest scholar of collaborative studies. In fact, Forman states that Bruffee "was foremost among composition scholars/teachers of that era [1970s] in defining and arguing for the importance of collaborative learning" ("Collaborative Business Writing" 234). Bruffee feels all writing is collaborative and focuses many of his studies on the social aspect of writing with others. Thralls states that we can use Bruffee's theoretical findings as "examinations of social construction, suggesting how theory might serve as a theoretical basis for the collaborative impulses in all writing" (64). Weiss says that Bruffee "defines collaborative learning as an approach to teaching that uses group work, attempting to develop and focus the 'resource' of 'peer influence.' Unlike other approaches, the collaborative method assumes that reading and writing are 'social' rather than 'solitary, individual acts'" (*Collaborative Writing in Industry* 33).

Although Bruffee focuses heavily on collaboration in education, his focus on the social aspects of collaboration allows the majority of his findings to be applied to writing in the workplace. As Bruffee states in his introduction, "Everybody collaborates everywhere, in fact, except where it counts educationally" (1). This emphasizes the fact that while teachers might not teach collaborative techniques and allow their students to collaborate in class, in nearly all other aspects of their careers, students will eventually be collaborating with others.

In *Collaborative Learning*, Bruffee illustrates the prevalence and value of collaborative writing when he states that

> The essence of collaboration will be familiar to those who have worked with an intelligent, compatible committee or task force on an interesting, demanding project. People in groups of this sort assume one another's will to do the job. They concentrate instead on a way to get the job done . . . . People who take part in a collaborative enterprise such as this exceed, with a little help from their friends, what no one of them alone could have learned, accomplished, or endured (21).

Focus on Peer Editing

Bruffee feels writers should work together, especially when revising their writing, in order to produce the best writing possible. Allen, Atkinson, Morgan, Moore, and Snow state that Bruffee "in his early applications of collaborative learning, centered his concern on peer-group editing of individually written drafts" (72). Ede and Lunsford state that "in his early work on peer tutoring and in his text, *A Short Course in Writing*, Bruffee holds to the concept of single authorship and individual creativity (students write alone and then revise after getting peer response, much as in the Elbow method)" even while maintaining the importance of working with others in a social context (*Singular Texts* 114).

Forman further states, "For business communication specialists, Bruffee's work furthered the influences of the following views: the identification of writing as more than sole authorship of a text, the privileging of the socially constructed text, the recognition that studies of collaborative writing require multidisciplinary perspectives, and the mandate to apply research and scholarship to teaching" ("Collaborative Business Writing" 234).

Social Implications: Writers as Part of a Community

Bruffee strongly believes that writers are part of a community with specialized language and processes. Ede and Lunsford state that "Bruffee argues that what and who we are and what we write and know are in large part functions of interaction and of community. Thus writing and reading are, essentially and naturally, collaborative, social acts, ways in which we understand" (*Singular Texts* 115).

Bruffee himself proclaims in *Collaborative Learning* that in order to work together, the collaborators "construct an ad hoc, transitional language that draws on whatever linguistic history they bring to the conversation and that eventually yields an agreed-upon language that constitutes a new community of knowledgeable peers" (123). The same phenomenon can occur in industry. When a writer and an engineer begin working together to document a software product, they must strive to use a language that is mutually understood. After time, the two have a new, common language that may not be comprehensible by others.

Kenneth Bruffee further explains that collaboration "fosters in students the responsibility to contribute to that community [to which they belong], to respect the community's values and standards, to help meet the needs of other members of the

community, and to produce on time the work they have contracted to produce" (48).

Applying this idea to writing in the workplace, it would seem that writers who work

collaboratively with a team will hold to standards and values established for and by the

team. Furthermore, writers working collaboratively will help other members of the team

by sometimes taking on additional responsibilities, but always meeting the deadlines

proposed by the team members.

Lester Faigley: Ways to Promote Successful Collaboration

In 1982, Faigley, along with Thomas Miller, surveyed 200 professionals and found

that 73.5 percent of them wrote collaboratively on the job. Debs states that this research is

the "only attempt to establish the extent of collaboration in the professions" with findings

published in a composition journal (*Collaborative Writing* 3).

Faigley and Miller looked at two different groups of people who worked on the same

project at different times. One group worked on this particular project 5 years before the

second group began their work on the identical project. They point out what made the

second team successful while the first failed. "In terms of the writing process, the

successful group distributed power in an egalitarian way, worked to soothe hurt feelings,

and was careful to involve all group members" (46).

Faigley and Miller specifically argue that the second group was successful because all

members of the group shared power. No one person took control at any time. There was

no hierarchy in the group, and all members participated equally. Furthermore, the second

group always wrote as a group, never in isolation. For this particular situation, when all

members wrote together, the resulting documentation, as well as the overall collaborative

experience, was significantly better than that of the first group whose members often wrote alone. Lastly, when problems arose in the collaborative group, members of the second group were quick to resolve the tension and make sure no individuals were uncomfortable. The first group, however, did not quickly resolve conflicts, and tensions rose continuously. All of these factors contributed to the success of the second group and the failure of the first.

Discourse Communities Formed by Collaboration

Faigley contributed a chapter to *Writing in Nonacademic Settings* that focuses on the social perspective of collaborative writing. He studied different writing situations, none of which involved a technical writer, but that are insightful and relevant nonetheless. He explains that researchers of the social perspective "view written texts not as detached objects possessing meaning on their own, but as links in communicative chains, with their meaning emerging from their relationships to previous texts and the present context" (235). Therefore, all communication is collaborative because even if only one person does the actual work, whatever produced is based on previous work.

Faigley argues that writers form a discourse community with other members of their project team. Faigley states that "Members know what is worth communicating, how it can be communicated, what other members of the community are likely to know and believe to be true" (238). The more team members that are involved in collaboration, the better chance they have in addressing the needs of their audience. Working together with their unique perspective and backgrounds, the collaborative writers cover all bases.

Stephen Doheny-Farina: Social Implications in Industry

Stephen Doheny-Farina looks at the social implications of collaborative writing, but focuses on nonacademic writing rather than writing in an educational setting. Unlike Bruffee, who focused on effects an organization has on writing processes, Doheny-Farina conducted a case study in 1985 exploring how a collaboratively written document "shaped and reflected the company's organizational context" (165). Employees of the company he studied worked collaboratively to produce a business plan, which was critical to the survival of the company. During the revision process involving all team members, Doheny-Farina found that the "process of making . . . rhetorical choices had a profound impact on the organization" (166). The authority structure of this 25-employee company changed as the team worked collaboratively to define the roles of each employee in the company. The new structure, in turn, imposed a new collaborative process for completing the business plan. Therefore, "as the writing process enabled a change in the company's authority structure, that change, in turn, affected the writing process" (167). Furthermore, "When the participants perceived a disorder in the organization [made visible by the business plan], which they attempted to solve rhetorically, there arose differing views of rhetorical situation" (176). They argued over the wording and tone of certain passages. A writer's rhetorical choices and the organizational context, thus, are often intertwined.

Changes Provoked by Collaborative Writing

Doheny-Farina illustrates how a collaborative writing process can influence an organization, and, reciprocally, how an organization can influence the writing process. The first instance would be difficult to perceive, if it exists, in a large, established company. Doheny-Farina conducted his study on a small, "newly formed company" in which this

influence could "easily occur" (162). It is easier to imagine the influence an organization has on the collaborative writing process. From the formation of collaborative teams to prescribed formats and style, the organization has a hand in all collaboratively written activities. At organizations like Cadence, for example, managers pick the collaborative teams and decide who will work with which groups. In addition, the technical writers must adhere to the *Style Guide* which details the formats and rules writers must follow. Thus, the organization determines who writers will work with, the form their documentation will take, and the style and rules they must follow.

Power Struggles in Collaborative Groups

In "Writing in an Emerging Organization: An Ethnographic Study," Doheny-Farina states that "writing on the job (a) is a complex act, one that requires workers to address diverse audiences for diverse purposes, and (b) fills important functions for both the writers and their organizations" (159). There are power struggles between superiors and subordinates when they are suddenly put in equal positions to work together. Debs states that "Doheny-Farina describes the ways in which the collaborative writing process reflected shifts in the power structure of the organization" (481). In the collaborative effort of vice-presidents and the president, Doheny-Farina states that "At stake in these apparently simple rhetorical choices were complex social issues: the autocratic decision-making power of the entrepreneur versus the team decision-making system of the production group (173).

Social Interactions and Their Influence

Doheny-Farina also points out that "invention processes in various nonacademic settings involve many types of social interactions, such as face-to-face dialogue, formal and informal meetings, brainstorming sessions, phone conversations, and so on. Through such social interactions, the writing process is influenced by interpretations of the organizational context" (161). In industry, when a technical expert reviews the documentation and suggests changes to the writer, that technical expert is passing on information that is influenced by his position in the organization. For example, when a customer support engineer at Cadence emphasizes the need for more examples and sample output files to be in the documentation, he is proposing something that might make his job easier. More examples may reduce the number of phone calls he receives from confused customers. The writer soliciting this engineer's input might be unaware of his organizational motives.

In addition, Doheny-Farina states that "Writers' rhetorical choices result from their conceptions of their rhetorical situations - conceptions that have been significantly influenced by the writers' interpretations of their social and organizational contexts" (160). Many writers copy specific phrases and tones that are typical of the organization's style. Attending writers' meetings can influence writing because writers hear what other writers are and are not doing. Hearing how one writer works differently with members of his or her project team can influence how another writer interacts with his or her own team.

In addition, Doheny-Farina's case study demonstrates "that collaborators need to develop a negotiative attitude with each other, so that the collaborators can alter their own views to achieve a shared bridge of meaning" (181). Cooperation and negotiation are essential parts of any successful collaborative act.

Lee Odell: Writers' Methods of Inquiry to Gain Information

Like Doheny-Farina, Lee Odell also studied social aspects of collaborative writing, but focused on the collaboration of two people who were working to document a piece of legislation. In 1985, Odell conducted a study involving a writer and a subject matter expert (SME). Odell studied their interactions as they collaborated on documenting legislation. Odell watched how the writer questioned the SME in order to get the information she needed to include in the document. Although only two individuals were involved in Odell's study, their interactions can be applied to writers working collaboratively in industry.

Odell explains that "Since the organization [the collaborators work for] places such emphasis on discussion and collaboration in the process of inquiry, analysts [the writers] are virtually required to develop some sort of interpersonal strategies that will help make a discussion productive" (260). Odell observed that the writer used interpersonal strategies "to draw out the lawyer [the SME], to find out what he knew and thought" (260). Odell concluded that the writer used the following tactics in her interaction with the lawyer:

- Paraphrasing or summarizing the lawyer's comments.
- Acknowledging her lack of knowledge or indicating an area in which she needed help.
- Avoiding arguments. At one point where disagreement arose, she did not attempt to defend her assertions against the lawyer's objections but, rather, indicated her willingness to check on the source of her information.
- Varying her role in the discussion. At times she allowed the lawyer to determine the direction of the discussion, but at other times she was very assertive about

how the conversation would proceed and carefully tested the lawyer's assertions (261).

By using these strategies, the writer was able to obtain the information she needed. Odell states that very often writers "must use these interpersonal strategies to complement the analytic strategies needed to explore the topic at hand" (261).

Nancy Allen: Many Faces of Collaboration

In 1987, Nancy Allen worked with other researchers, namely Dianne Atkinson, Meg Morgan, Teresa Moore, and Craig Snow, to explain and describe various forms of collaborative writing. They interviewed 20 collaborative writers to discover writing processes and their unique characteristics. Their study clearly illustrates that there is no one way to collaborate.

Allen, Atkinson, Morgan, Moore, and Snow state that "It is clear from the studies cited that collaborative writing can include a range of activities:

- a supervisor's assignment of a document that is researched and drafted by a staff member but carefully edited by the supervisor

- collaborative planning of a document that is drafted and revised by an individual (Odell)

- individual planning and drafting of a document that is revised collaboratively (Doheny-Farina)

- a peer's critiquing of a co-worker's draft

- the coauthoring of a document (Ede and Lunsford)" (71).

Benefits of Collaborative Writing

Allen and her collaborators found that most writers find collaboration beneficial. Allen explains that "Respondents reported that the major and most satisfying collaborative effort usually took place at the beginning of a project, while group members planned the document" (77). Furthermore, the writers they interviewed "found the benefits of collaboration to be worth the costs. Although our respondents mentioned costs of time, of energy, and sometimes of ego, they stated that the documents they produced were definitely better than those any one of them could have produced alone" (82).

Decision-Making Power

Collaboration can be most beneficial when all contributors feel that decision-making power is equally distributed. Allen states, "The group members we interviewed shared decision-making power in two ways. First, any one person in these groups could object to any decision made in the group or even decisions made by the group leader. Second, they shared decision-making power only within this specific group and for their collaborative task. The power they shared in the collaborative context did not extend to other contexts" (81). When all members feel they have some sort of control and can voice their opinions, collaboration can be successful.

Barbara Couture and Jone Rymer: Ways of Collaborating

In *Collaborative Writing in Industry: Investigations in Theory and Practice*, Couture and Rymer present the results of a study where they "surveyed over 400 professionals who write at work in a wide range of occupations and organizations" (87). Although they investigated only the discourse interaction between writers and supervisors, their findings offer more evidence of social factors and processes at work in collaborative situations. Couture and Rymer define discourse interaction as "oral or written communication pertaining to a document during the process of planning, drafting, and revising" (87). The results they gathered are as follows:

- 24 percent of professionals write collaboratively with a group

- 37 percent plan their documents with a group

- 76 percent talk with other members of their group before writing

- 78 percent get feedback on their writing from group members

- 81 percent revise their documents after getting feedback from and interacting with group members (89).

While their study showed the overwhelming occurrence of collaborative writing, Couture and Rymer took this study a step further as discussed in chapter four of *Writing in the Business Professions*. In this further exploration, Couture and Rymer use a similar definition of collaboration meaning "the broad term currently used to designate writing in which more than one person contributes to the effort, but the nature of each participant's interaction with the others and 'contribution' to the end product are far from clarified" (73).

When applied to writing in industry, Couture and Rymer state that their study found that "writers on the job do frequently collaborate, but this 'collaboration' usually does not

involve producing a document with a group. Rather, it typically represents simple interaction--either before or after drafting . . ." (77). Couture and Rymer conducted their study in 1989 and while this may have been the case in their survey, I am not convinced that they would find the same sort of collaborative interaction today. Not only is interaction with others not "simple" when a writer is trying to produce worthy documentation, but if writers are working with others to devise a document, would that not be considered "producing a document with a group"? The collaborative actions of writers and the production of documentation should not be separated. The two processes must go hand in hand, and are not mutually exclusive.

Communication is Essential

Debs further states that "the case studies Couture and Rymer conducted suggest that writers and managers often disagree as to the function of the interactions centered on any documents, with managers preferring, for example, to spend time revising a draft rather than planning the document with the writer" (480).

The differing opinions held by managers and writers about collaboration show how important communication is in any collaborative effort. The managers and writers had different views on the function or purpose of writing collaboratively and the responsibilities that each member had, but the differences were never discussed. It is essential to set responsibilities and constantly communicate in every step of a collaborative project.

Forman elaborates on this point by stating that because of their study findings, Couture and Rymer "concluded that hierarchical dyadic writing typically consisted of interaction *after* a draft had been written by the subordinate, and was often marred by

conflicting expectations about the aims of collaboration. They found that the subordinate primarily viewed the task as an information-gathering activity, whereas the superior viewed it as an opportunity to be prescriptive" (Collaborative Business Writing 239).

Collaborating in the Early Stages

Couture and Rymer's case study finds that "Most career writers [technical writers] (94 percent) discuss their plans before writing . . . [and] Almost all · reer writers (95 percent) get feedback after drafting" (79). Debs states that Couture and Rymer's study suggests "that when writers do collaborate as members of a team or group, they are more likely to do so during the planning stages" (478). Collaborating at an early stage certainly makes it easier to continue collaborating for the remainder of the project. By involving people early, collaboration will seem more logical and necessary in the future.

Lisa Ede and Andrea Lunsford: Writers' Views and Processes

Ede and Lunsford set out to conduct a "simple" survey of collaborative writing in industry. Instead, they found many undiscovered and muddled views of collaborative writing by those who were involved in it. In their collaboratively-written text that describes this survey, *Singular Texts/Plural Authors: Perspectives on Collaborative Writing*, Ede and Lunsford state, "That first deceptively simple-sounding question we posed--is writing necessarily an individual activity?--did not plunge, straight and swift, toward safe answers, but rather drifted in and out of currents and eddies, sending forth a rippled series of secondary and tertiary questions" (13).

In 1990, Ede and Lunsford surveyed 520 professionals from 6 organizations, including the Society of Technical Communication. Ede and Lunsford state that the surveys were "intended to identify the nature, types, and frequency of writing done" in the respondents' profession (182). The first survey focused on the types of writing done by the respondents and how often documents were written alone and with one or more person. The second survey focused more heavily on collaborative writing. The survey results from members of the Society for Technical Communication were most relevant to my research. The following summarizes particularly interesting findings (all from members of the Society for Technical Communication) from the research conducted by Ede and Lunsford.

Survey I

- Seventy-three percent of respondents' time is spent writing alone, while 11 percent of their time is spent writing with one other person. The respondents spend 13 percent of their time writing with 2 to 5 people, and 3 percent writing with 6 or more people.

- Forty-one percent of respondents work "very often" with one or more persons when writing user manuals or other detailed instructions.

- Fourteen percent of respondents "very often" collaborate when one member plans and writes a draft, and the group or team revises. Twenty-seven percent of respondents say they "often" work this way, and 38 percent responded "occasionally" to this same question.

- Twenty-two percent of respondents find writing as part of a team or group, as compared to writing alone, "very productive." Forty-six percent found writing together "productive."

<u>Survey II</u>

- Forty percent of respondents answered that, in general, they work with the same person or persons. Sixty percent responded they do not generally work with the same people.

- Sixty percent of respondents generally draft their writing projects alone while 70 percent revise their projects partly alone and partly with a group.

- Fifty percent of respondents "very often" have group-assigned duties for completing projects according to a plan. This plan can include division of writing tasks.

- Seventy percent of respondents received no on-the-job training to prepare them for the group writing they are doing.

Advantages of Collaboration

Debs also points out interesting findings by Ede and Lunsford when she writes that the respondents to their surveys "noted the following advantages of collaboration: 'joint knowledge, experience and writing expertise; a variety of approaches and ideas; the strengths of all members; different perspectives that generate better ideas for a better product'" (479).

Writers receive a wide range of comments depending on who the reviewer is. An engineer will offer information that a technical marketer cannot, and vice versa.

Writer's View of Collaboration

Ede and Lunsford point out that writers often do not consider themselves to be writing collaboratively because "respondents think of writing almost exclusively as writing 'alone' when, in fact, they are most often collaborating on the mental and procedural

activities which precede and co-occur with the act of writing, as well as on the construction of text" (66). It all depends on one's definition of collaboration. If writers are dependent on others for technical accuracy and completeness, they might be more inclined to consider themselves writing collaboratively.

Mary Elizabeth Debs: Writers Collaborating Outside Publications

Like Ede and Lunsford, Mary Elizabeth Debs also explores how common collaborative writing is in the workplace. In her 1986 dissertation titled "Collaborative Writing: A Study of Technical Writing in the Computer Industry," Debs describes the prevalence of collaborative writing when she states that "Collaboration is very much a part of the writing process of any individual participating in an organization" (1). Furthermore, "Any written product, then, cannot be seen only as the recorded yield of a single person; it may be the result of a series of communication interactions, oral and written, and the perception of these interactions between the writer and various people within and outside the organization" (5).

Debs also describes how many forms of collaborative writing can take place in industry. She states that "collaborative writing is not a set system that occurs in the same way each time a group is set up; it is an iterative process which is altered in response to a variety of conditions: the personalities of team members, the writing task, even the layout of the physical environment" (11). Certainly, not all writers collaborate in the same way. Furthermore, the same writer might collaborate very differently when working with one group as opposed to working with another group.

In her dissertation, Debs describes her study in which she surveyed technical writers in 8 technical companies and government agencies. Among other things, Debs found that "In the course of one day, selected at random, one writer wrote for 30 minutes; the remainder of the day she met with a programmer, other writers in the group, an ad-hoc committee, user-testing participants, the test lab manager, and her planner" (199).

When Structured Collaboration is Beneficial

To increase the effectiveness of collaboration, Debs finds that several writers "indicated that formally-set up collaborative writing or an increase in collaboration would be desirable in four situations:

1. As a way of introducing new writers to the organization's procedures and standards;

2. As a way of addressing projects that are new, ambiguously defined, or in any way outside the traditional practices of the organization;

3. As a way of improving the status of the writers within the larger corporation and eventually increasing their contribution to the total product design process;

4. As a way of increasing exchange of information and channels for innovation" (248). It seems that writers might benefit from having collaboration formally set-up by their managers.

The Research as a Whole

All this research in collaborative writing presents some generalizations that help clarify collaborative writing in industry. Even though collaborative writing is not a main focus in education, it occurs nearly everywhere in industry. While it is hard to pinpoint one definition of collaborative writing, or even one way of collaborating, it is clear that technical writers do collaborate with technical experts.

Social implications arise from collaborative writing. Decision-making power, social interactions, inquiry methods, and writing stages all affect how collaborative writing occurs. Benefits of collaborative writing such as technical accuracy, mutual respect, and increased knowledge motivate writers to work effectively with technical experts.

CHAPTER 3

Case Study: Collaborative Writing at Cadence Design Systems

In order to discover how real-life writing in industry compares to this research, I conducted a case study with four writers at Cadence Design Systems. I chose Cadence not only because, as an employee, I could easily obtain data, but because collaboration is nearly essential for writers at Cadence. The highly technical software products that writers document at Cadence demand a specialized, technical background in electronic design automation. Most writers do not have a technical background and must rely on the technical experts to explain and clarify what needs to be documented. Writers at Cadence never write in isolation. They are always conferring and collaborating with technical experts.

Writers at Cadence are placed on project teams. All members of the team serve different functions in the development of their particular software product. There is usually only one writer on each project team. Other members can include application engineers (AEs), technical marketing engineers, quality assurance (QA) engineers, research and development (R&D) engineers, and project team leaders.

When writers are placed on project teams, they are required to document the software functionality using whatever resources are available. Most often, the only source of information is the technical experts on the project team. Therefore, writers must solicit information from these experts. Collaboration is essential to producing accurate documentation. However, writers at Cadence receive no formal training in collaborating with members of their project team. There are no guidelines or suggestions given to any writers regarding working with these technical experts. Therefore, with collaboration so

prevalent and unstructured, Cadence seemed the ideal setting to compare how collaborative writing in industry really operates.

Methodology for Case Study

I worked with four technical writers at Cadence Design Systems to gather information about collaborative writing processes. Using the methods outlined in *Case Study Research: Design and Methodology*, I developed the following five components to the case study:

- Propositions
- Questions to ask the subjects
- Units of Analysis
- Comparison of data to propositions
- Interpretation of findings

Propositions

After studying research in collaborative writing and applying it to what I have observed at Cadence, I followed the advice given in *Case Study Research* and developed a list of propositions. These propositions were assumptions about what I felt were the underlying factors that mold collaborative writing efforts at Cadence. The propositions are like hypotheses and help focus the case study to avoid gathering useless and unmeasurable data. The following propositions are what I felt the responses given by Cadence writers would reveal:

- Collaborative writing skills are essential to being a writer at Cadence.

- The more writers feel they are part of a team, the more accurate and complete the documentation is.

- Different writers have different ways of collaborating with project team members.

- Writers who work closely with their project team members consider their writing to be collaborative.

- The effectiveness of collaboration depends largely on the effort writers take to involve themselves with other members of the project teams.

- Writers would benefit from receiving training in writing and working collaboratively with others.

- Sharing responsibility of the documentation increases cooperation of all team members.

- The more knowledgeable writers are about the software they are documenting, the better the collaborative writing process is.

I distributed a questionnaire of 25 questions to the case study subjects. The questions focused on how they interact with other members of their project teams when producing documentation. I used the propositions to help determine what questions to ask the subjects in order to receive meaningful responses. See Appendix A for a copy of the questionnaire the subjects completed.

Units of Analysis

The units of analysis for a case study are the individual subjects being studied (Yin 31). I studied the collaborative interactions of four technical writers at Cadence Design Systems. The following gives a brief description of their backgrounds.

The first case study subject is Lee Berger. Lee is a Senior Technical Writer and has worked at Cadence for five years. He has 10 years experience as a technical writer. Lee documents a software product called Vampire, which is a command language and graphic user interface used to verify logic and physical integrated circuit designs. He writes the *Vampire Reference Manual*. The Vampire project team includes a Research and Development (R&D) Engineer, two members of the technical marketing division, two Application Engineers (AEs), two Quality Assurance (QA) Engineers, and Lee from technical publications.

The second case study subject is Ann Lukan. Ann is also a Senior Technical Writer and has been at Cadence for two years. She has been a technical writer for five years. Ann documents a product called the Technology File, which defines all physical information required for an integrated circuit design. Ann writes the *Technology File Reference Manual*, which describes the commands users need to edit the technology file. Ann also updates the *Technology File User Guide*, which explains how to create and maintain a technology file. The other members of Ann's product team include an R&D manager, who also acts as the project lead, a QA engineer, a technical marketing engineer, and an R&D engineer.

The third case study subject is Suzanne Moore. Suzanne is a Technical Writer and has worked at Cadence for five years. She has eight years experience as a technical writer. Suzanne writes for a product called System for Library Development (SLD), which is a

software system used to create libraries for designing chips. She is writing the *Design Automation (DA) User Guide* to assist design automation developers in developing libraries for their specific needs. The members of the SLD team include one trainer, five R&D engineers, two account managers, and Suzanne as the writer.

The fourth case study subject is Jenifer Renzel. Jenifer is a Senior Technical Writer and has worked at Cadence for four years. She has two years experience as a technical writer. (Jenifer was an editor before she became a writer.) Jenifer documents a software product called Oasis, which allows integration of non Cadence simulators into the Analog Artist environment (another Cadence product). Jenifer is creating the *Oasis User Guide* to accompany the software. The members of the Oasis product team include one project lead who is also a developer, three additional R&D engineers, one QA engineer, a technical marketer, and Jenifer as the writer.

I chose Lee, Ann, Suzanne, and Jenifer as my case study subjects because I was under the impression that all four of them worked fairly closely with their project teams. After observing their daily interactions, hearing their concerns and input in meetings, and asking them very brief initial questions, I determined that they all had enough interaction with their project team members to yield interesting and meaningful data.

Comparison of Data to Propositions

By giving the respondents a questionnaire and then analyzing the data, I was able to compare what I thought were accurate assumptions about collaboration to what really occurs at Cadence. The following sections describe what the case study showed. The propositions are presented in boxed text.

To better grasp how closely each of the case study subjects works and collaborates with their project team members, I asked each subject to briefly outline the process they go through in producing the documentation. Their responses below indicate that the writers are continuously writing collaboratively with these project team members throughout the production of the documentation.

> *Collaborative writing skills are essential to being a writer.*

Collaboration Through Production

Lee began composing the *Vampire Reference Manual* by adapting a functional specification written and kept up-to-date by a technical marketing manager. He also gathered necessary information by attending meetings that focused on the Vampire product. Lee clearly did not begin his documentation in isolation. It can even be said that the entire Vampire documentation is a collaboration with the marketing manager. Because this manager created the first "version" of the manual, Lee was using what already existed.

Likewise, Ann involved other people in the stages of creating the *Technology File Reference Manual*. Not only does she read existing specifications and documentation written by other people, but she enlists the help of SMEs to review what she has written before she sends the material out to a large group of people. From gathering essential information to reviewing completed sections, Ann collaborates with members of her team throughout production of the manual.

Suzanne also worked with existing documentation to develop the *DA User Guide*. She explains that she talks with SMEs, developers, and managers to make sure she has not

excluded any essential information. Furthermore, she solicits and incorporates changes and edits made by other people to the documentation.

Jenifer also worked closely with others to create the *Oasis User Guide* and notes that an important process for her is to introduce herself to the team and make a good first impression. Jenifer creates and distributes her documentation plan to all team members. Jenifer incorporates review comments from SMEs and others who review the manual.

All of the writers' responses support my proposition that collaborative writing skills are essential to being a writer at Cadence. Writers must constantly seek the assistance of other members of their project team. Writers rely on these technical experts throughout many stages of their writing.

Collaboration in Stages

It was not surprising to find that all respondents work together with others in nearly every stage of producing the documentation. To determine if all the writers collaborate with others in the same stages of writing, I asked them to describe when they most often collaborate with others. Lee most often collaborates when revising documentation. Ann and Suzanne collaborate with others in planning, writing, and revising. They cannot distinguish one stage as involving or requiring more collaboration than another. Jenifer most often collaborates with others when writing the documentation, not planning or revising. Therefore, not all writers collaborate with technical experts in the same stages of producing documentation. This finding does not correlate with the findings of Couture and Rymer, as detailed earlier. Couture and Rymer's study suggests "that when writers do collaborate . . . they are more likely to do so during the planning stages" (Debs 478).

Reliance on Experts

While the stages of writing differ from one writer to another, the overall reliance on their project team members should be nearly identical because writers need particular information from their team members. When asked how often they rely on their product team members when producing the documentation, the writers agreed they rely on team members frequently. Lee said that although it depends on what stage he is in, he relies on team members most often when he needs review comments. Ann notes that she often relies on team members on an hourly basis if she does not understand something. If she does understand what she is writing about, she "can go three or four days without calling someone." Suzanne notes that she relies on her project team members throughout all stages of the documentation from planning to reviews. Jenifer answers that she has "questions for different members on a weekly basis." She continues, "I rely on them heavily during [the] writing stages for new material and during review cycles." Overall, it is clear that these writers must collaborate frequently with their project teams.

> *The more writers feel they are part of a team, the more accurate and complete the documentation is.*

Importance of Experts

With all this interaction between writers and their project team members, it seems writers could not produce high quality documentation without their input. When asked how important team members are in their production of the documentation, all writers emphatically agreed that they are important. Lee answered that he couldn't do his job "very well without their help, because Vampire is a complex product that I [Lee] couldn't figure out how to use on my [his] own."

Likewise, Ann stated the importance of her team members when she writes, "They [team members] are essential in providing technical input that teaches me what to write." Suzanne expresses a similar view when she responded that "Team members are crucial in terms of producing documentation." Jenifer replied that the members of her product team are "extremely important. If my team did not support me and answer my questions, my books would be garbage!"

The writer's responses confirm my proposition that the more writers act as part of the project team, the more accurate and complete the documentation is. The writers agreed that working with technical experts on their project team ensures technical accuracy. All writers are continuously in contact with members of their project team, and, in turn, team members verify the writers' work. This supports Debs' claim that "working with new or complex systems of products, they [technical writers] rely almost exclusively on the product designers for descriptions of the product and how it works" ("Collaborative Writing" 208).

> *Different writers have different ways of collaborating with project team members.*

Members Involved in Collaboration

The technical experts the writers collaborate with differ from project team to project team. Not all teams have three R&D engineers or two technical marketers. To determine if writers in different groups collaborate with SMEs of the same job position, I asked them who they collaborate with most frequently.

Lee collaborates most often with the technical marketing manager. He also works with R&D engineers. Ann works closely with an R&D engineer. She noted that she meets

with him every two weeks for two to four hours. They also regularly exchange voicemail and email. Suzanne works primarily with two lead developers. They often provide her with the data about which to write and answer her questions about the material. Jenifer also works most closely with two developers. So, while all these writers collaborate with technical experts who provide the necessary information and make sure the documentation is accurate, the specific experts the writers rely on differ from team to team. It isn't always the R&D engineer or the technical marketer with whom the writers collaborate with most often.

Members Involved in Reviewing

Not all team members review the manuals. The subjects responded that they get more reviews from some people and do not expect responses from all team members. Lee stated that about two-thirds of the project team reviews the documentation and "some more often and better than others." Suzanne said that "Often, developers and SMEs will provide more detailed feedback on their areas of expertise. Trainers and writers often provide the best feedback in the areas of organization, completeness, and technical accuracy, since they themselves are often documenting similar material or documenting the same material but in a different way."

When Writers Need Collaboration

When producing documentation, the technical experts and other contributors might not be essential *all* of the time. There may be stages when a writer does work in isolation without the assistance of others. To discover when writers most often collaborate with product team members, I asked each of the test subjects to explain at what point they rely on their team members. Lee responded, "It's an ongoing process. I rely on the team

throughout the release cycle, most importantly when I need review comments." Ann's response is similar: "Initially, I work with people to determine scheduling and TOCs [Table of Contents]. Later I need them to teach me and review my work. I basically rely on my teammates all the time."

Suzanne noted the following times when she relies most heavily on her project team members:

- "Before first writing phase as suppliers of functional specs [specifications] and other miscellaneous raw data and material.

- During reviews as reviewers.

- After each review for consultations on their feedback.

- During index reviews as providers of synonyms."

Jenifer also relies on her team members during initial review phases. Jenifer needs the team members "At the beginning/planning state . . . When I'm writing new sections . . . [and] When I send material to review."

This information supports my proposition that different writers have different ways of collaborating with team members. Writers employ different methods of working with others. They also seek the help of others at different phases in their writing cycles. With different personalities, different ways of writing, and different collaboration skills, writers necessarily collaborate with team members in very dissimilar ways.

> *Writers who work closely with their project team members consider their writing to be collaborative.*

<u>Writers' View of Collaboration</u>

It is obvious that writers need to work collaboratively with their project team members. Every writer noted the importance of working with team members and their

reliance on input from them. However, I was not sure if these writers would describe the work they do as "collaborative." After all, they hold the title and position of Technical Writer and are required to deliver the documentation. I have never heard any writer at Cadence use the word *collaborative* to describe their writing. To determine how the case study subjects view this issue, I asked them if they consider the documentation they work on to be a collaborative effort. Surprisingly, most respondents replied yes. Ann was the only respondent to answer no. Her response is as follows: "No. I write it. I collect input and confirm that how I interpret it is right, but it's my responsibility to produce the documentation. Of course, I don't think any of my team wants to share that responsibility, even if I did [write collaboratively with them]." Lee, Suzanne, and Jenifer noted that they do consider their work to be collaborative because of all the ways they gather existing information, work and converse with team members, incorporate technical information from experts, and rely on team members to review and correct their work.

Because writers must rely on technical experts in order for the documentation to be accurate and complete, I do believe documentation produced at Cadence is collaboratively written by writers and their technical experts. While only Ann would disagree that her documentation is collaboratively written, my sample is much too small to make a generalization about how most writers feel. Out of the 25 writers in my division at Cadence, I would guess that all of them must get constant input and guidance from their technical experts. However, it is not clear if all writers would consider their manuals to be a collaborative effort.

The writers' responses do not fully support my proposition that writers who work closely with their project team members consider their writing to be collaborative. Even though Ann works closely with her team, she does not consider her manuals to be collaboratively written. It seems that the amount of time a writer spends collaborating with

team members does not indicate if the writer views his or her work as collaborative. My findings also refute the argument made by Ede and Lunsford. They state that writers often do not consider themselves as writing collaboratively because writers "think of writing almost exclusively as writing 'alone' when, in fact, they are most often collaborating on the mental and procedural activities which precede and co-occur with the act of writing . . ." (66).

Methods for Collaboration

When writers collaborate with their project team members, what methods do they use? With differing personalities, styles, and technologies, it is easy to assume that writers interact and collaborate with technical experts very differently. I asked the case study subjects what methods they use when working with their team members. Responses showed that the majority use email and face-to-face interactions. Ann and Lee prefer talking directly to team members and do this most often. Suzanne must rely more on email since some of her team members are in India, and arranging time to talk is difficult. Jenifer says that she relies most often on face-to-face interactions and email.

Skills for Collaboration

While writers use email and face-to-face interactions to engage in collaboration, the skills to actively collaborate with others are very different. Working collaboratively with others requires skills that are not traditionally believed to be essential skills for technical writers. To discover what skills the subjects develop and use frequently as writers, I asked them to describe how they gather information from their team members. Ann went into great detail in describing her strategy:

"Planning your questions is the best way to get in good with a team. When you put effort into figuring things out and present your questions that way, your teammates don't feel like they are carrying you. It's ok to be ignorant, but the more effort you put into figuring something out first, the more respect you'll get from your teammates, and the quicker they'll respond next time. And, if you are trying something out, they might just call you for advice, and it's really great being involved in the whole development, instead of hearing about it after."

Suzanne lists the following as skills she uses to gather information:

- Assertiveness
- Clarity in expressing needs/setting clear expectations
- Setting manageable deadlines
- Follow up; show appreciation

Suzanne makes sure she is straight-forward and clear in asking questions. When the technical expert gets sidetracked or loses focus, Suzanne guides him or her back to the topic at hand by asking specific questions.

Jenifer lists patience as the skill she uses when gathering information from experts. Jenifer explains, "I am careful not to criticize their written materials if they are unclear. I think diplomacy and tact are crucial." Jenifer makes sure the expert is comfortable in responding to her.

There is some correlation between the skills these writers employ and the skills Lee Odell pointed out. For example, Odell states that the writer he studied paraphrased the SME's comments, specifically told the SME which areas she needed help with, and avoided arguments (261). Ann, Suzanne, and Jenifer all employ similar tactics.

> *The effectiveness of collaboration depends largely on the effort writers take to involve themselves with other members of the project teams.*

Successful Collaborations

With their personal ways of gathering information and working with others, it is important to know that the skills writers use are effective. I asked the subjects to describe a time that they were most successful in collaborating with their team members. All subjects related cases of working closely with one or more other persons. Lee described a time when he worked very closely with a technical marketer. Lee explained how this marketer used information Lee had written in the reference manual in order to create and update the functional specification. Lee stated that the marketer also "updated the spec [functional specification] with new information, which I then added to the manual." They worked together, each building on the other's writing.

Likewise, Ann described her most successful collaboration as a time when she solved problems with team members. Ann stated, "I feel most successful when we [product team members] solve problems together. If I have difficulty documenting something . . . and raise the issue with my teammates, we usually sit down and redesign it." Working collaboratively with others creates a successful feeling for Ann.

Suzanne described her most successful collaboration as a recent event when she worked with a developer. She stated, "This developer has been instrumental in writing preliminary material and reviewing my edits and organizational changes to his material." Suzanne constructed the manual based on existing product information written by the developer. Their continued interaction helps ensure that the material is accurate.

Jenifer described her most successful collaborative effort as a time when she became more forceful in asking and reminding her team members to give her input. When the team members did provide her with the necessary input to include in the manual, Jenifer says,

"The developers were greatful [sic] and I felt pretty good." Jenifer took a more active and responsible role in the collaborative process and thus felt successful.

These responses validate my proposition that the effectiveness of collaboration depends largely on the effort writers take to involve themselves with other members of the project team. It is clear that these writers have had very successful collaborations with technical experts on their project teams. They all continue to be active members of their project teams and seek the input and corrections of team members.

Best Team-Produced Document

When asked what characterizes an excellent document produced by a team, the respondents chose very different descriptions. Lee said it was the involvement of the writer in the early stages of the product's development. Ann said that the parts of the document produced by a team should be well-structured. Suzanne stated document qualities such as "clear organization/technically accurate and complete . . . heavily reviewed by internal users." Jenifer chose to describe ideal team members and said the following: "Ideal team members are responsive and flexible. They recognize that all team members are important to the success of the project, so they treat all members with respect." In every response is the mention of others.

Reason for Effectiveness

When asked what one factor most accounts for the effectiveness of the documentation they work on, the respondents had similar responses. Lee cited thorough reviews and feedback from customers and from team members. Ann stated the fact that her project team cares that the documentation is of high quality. The team members show devoted interest in making sure the customers get high quality manuals. Suzanne said the

usability of her documentation makes it effective. It is clearly organized, technically accurate, and contains an accurate and complete index. Jenifer also noted the quality and usability of the document as the factors that make it most effective. In this question also, we see responses that mention working with team members.

Advantages/Disadvantages of Collaboration

With the prevalence of collaboration evident among writers, it is not surprising that three of the four respondents listed more advantages of collaboration than disadvantages. (The fourth subject listed an equal number.) Lee stated that the major advantage of collaboration for him is "that I'm accepted on a [sic] equal basis as part of the team and they cooperate and work with me . . . I don't think that there are any disadvantages." While Ann noted advantages such as technical accuracy and team involvement, she states the following disadvantage: " . . . sometimes you have to arrange your writing schedule to arrange a meeting with an SME. But it's usually worth it." Suzanne also pointed out the advantages of having the information correct and understanding the project more completely when collaborating with team members. She noted one disadvantage is "a lack of cohesiveness amongst the team members" which results in ineffective communication. Although this might not be a disadvantage of collaboration, it certainly prevents collaboration from happening in the first place. Jenifer stated the following advantages in collaborating with team members: "You have lots of reality checks for your material, and you have lots of people that you can ask questions. You feel like part of a team with a common goal." As far as disadvantages, Jenifer related the frustration of getting "conflicting ideas or conflicting review comments."

The responses from these writers parallel findings by Allen, Atkinson, Morgan, Moore, and Snow. As stated previously, the writers they interviewed "found benefits of

collaboration to be worth the costs. Although our [Allen, Atkinson, Morgan, Moore, and Snow's] respondents mentioned costs of time, of energy, and sometimes of ego, they stated that the documents they produced were definitely better than those any one of them could have produced alone" (82).

> *Sharing responsibility of the documentation increases cooperation of all team members.*

Decision-Making Power

These writers clearly have positive feelings of collaborating with their team members and can give many advantages of collaboration. Even though they continuously work closely with other project team members, do they as the "writers" make all decisions about the documentation? When asked that question, all the writers answered that they themselves most often make decisions about the documentation they work on. Both Suzanne and Jenifer note that they consult with their team members once they make a decision, but they do make most decisions.

Even though, as pointed out earlier in the research section, Doheny-Farina stated that power struggles can surface when working collaboratively, this does not happen with these writers. They are considered equal members of the team and do not have to fight for their decisions about the documentation. The corporate environment might be a factor in this case. Team work is highly regarded and praised at Cadence, which allows for more flexible and team-oriented employees.

Final Responsibility

With the decision-making power in their hands, does the final responsibility of the documentation rest on the writer? All the writers responded that they themselves take final responsibility for the written product. I have never heard anyone besides a writer take responsibility for documentation. Writers receive the awards and recognition for the documentation, not the SMEs.

The responses I got from this question do not support my proposition that sharing responsibility of the documentation increases cooperation of all team members. It seems that at Cadence the writers hold final responsibility of the documentation, and project team members are not held accountable. Writers seem to accept and appreciate having the final weight on their shoulders. Perhaps my idea of sharing responsibility with all team members would not foster greater cooperation among the team. The writers I studied have no trouble with uncooperative team members.

Unsuccessful Collaborations

Of course, not all collaborative efforts are successful. As much as a writer tries to collaborate with technical experts, there might be substantial barriers blocking those efforts. The case study subjects were asked to describe the most serious problem they have encountered when working with their project team. Lee stated that his most serious problem was "Too many changes at the end of the release cycle and not enough time to incorporate them into the manual." Ann described her most serious problem as "No usability testing in [the] planning stage. I found inconsistencies months ago, and we're just now getting into usability testing." Suzanne noted bad communication in her project team as a serious problem. She stated that this lack of communication "makes it very difficult for team members to create schedules and set 'real' deadlines." Jenifer described her most

serious problem as the attitude of team members. Her experiences with rude team members have made her feel like a "less important" part of the team.

Except for Jenifer's response, the answers indicate general problems among the team members and not problems between writers and technical experts. For example, in Lee's case it was the entire team that failed to make changes to the software early enough for them to be documented. The planning was not effective, and the engineers were behind and not sticking to the schedule. Ann related a problem with testing the software. This is the entire team's responsibility. The bad communication in Suzanne's group is also a malfunctioning aspect of the team. Only Jenifer's response indicates a problem between the project team and the writer. Overall, it seems the problems in collaboration are not unique to the writers but are problems with the project team as a whole.

<u>Training in Collaboration</u>

With the final responsibility on the shoulders of the writers, they obviously must do all they can to create successful collaborative relationships with their project team members. As mentioned earlier, it takes certain skills to interact and collaborate with individuals. Did the writers receive any training when they began at Cadence to help them interact with project team members? Three out of the four respondents answered that they received no training in interacting with or gathering information from others. They all noted that the skills they have now and the techniques they use are based on years of experience in working with others. Jenifer is the only one who received any training in this area and that was from her mentor when she first began working at Cadence as an intern.

<u>Ideas for Collaboration Training</u>

Although they received no training and developed their skills on their own after years of trial-and-error, how would the writers recommend that new writers be trained? The respondents were asked what elements would they include if they were designing training for Cadence writers who need to interact with their project teams. The answers were varied and, disappointingly, quite vague. Lee said, "Teams need to realize how pubs [the publications department] fits in and why it's important. There isn't a single easy way to accomplish this. A lot of it depends on the personalities." Ann noted that the following should make up a training course: "Interview skills, product training, know your authoring environment, and get a teammate to mentor you." Ann notes the importance of writers developing a relationship with at least one technical expert that she or he can always go to for help. Suzanne described writing courses that she has taken that have helped her improve her interactions with project team members. All the courses she listed were taught by publication consultants such as Jonathan Price and JoAnn Hackos. She attended the "Moving Procedures and References Online" by Jonathan Price and "Practical Usability Testing" by JoAnn Hackos. None of these courses were taught by Cadence trainers or members of the publications department. Jenifer stated the following items that should be included in training for interacting with team members:

"How to provide feedback in a nonjudgemental way. Personal accountability = taking responsibility for your part of a project team <u>and</u> the project as a whole. Communication skills--verbal and written."

Even though I was hoping to get more specific skills that writers could be taught before being required to collaborate with technical experts, these writers may not be able to think back to their first months as writers. Their responses do not directly support my proposition that writers would benefit from receiving training in writing and working

collaboratively with others. The writers had no strong opinions about receiving training, and no writer indicated it would be a good idea. Most of these writers are very experienced, seasoned writers and may not remember some of the pitfalls they encountered. Perhaps collaborative training would be a waste of time for experienced writers, but very helpful and useful for inexperienced writers or writers who have difficulty collaborating with their teams.

> *The more knowledgeable writers are about the software they are documenting, the better the collaborative writing process is.*

Additional Comments on Collaboration

When asked to supply any additional comments about working with their project teams, only Ann and Jenifer responded. The following is what Ann wanted to add:

> There's lots of different styles of writers. The kinds I like best are the ones like me because I understand them. Cris and Linda [other Cadence writers] infiltrate their product teams like I do, so we all work well together. Other people do it differently, and they achieve good results too. I don't think there's one right way, I think the natural personality of the writer should dictate how they approach this job.
>
> I do know that several times when I first started with a team, I heard things like, 'You mean you use the software [?],' and 'You know what that means?' after they've [SMEs on the project team] drifted into engineering-eze. I think it's hard on the tech pubs profession when writers don't get involved with the product. You don't have to read the code [to the software], but you have to understand what they are talking about to get what you need.

It is clear that Ann gets very involved with her project team. Her understanding of the software and involvement in all areas of the project team command the respect of the project team members.

Jenifer added the following comments:

> Cadence strongly supports the idea of product teams, so the corporate environment is built on teamwork. I think that being a part of a product team is the best way for writers to get the support they need from R&D. One great thing about my team is that we have good customer contacts for feedback. I am actually using customer review comments for my docs [documents]."

Jenifer has positive relationships with her product team members and continuously interacts with them.

CHAPTER 4

Interpretation of Findings

All the information I gathered from these writers clearly shows that collaborative writing is an essential component of being a technical writer at Cadence. The writers are active and important members of their project teams. Almost every response to the questions revealed how much writers rely on these technical experts. Writers continuously interact with team members. The Cadence environment does support and help foster strong teams. Writers receive maximum benefits when they fully participate in their project teams. Their participation ensures technically accurate manuals.

With this heavy reliance on technical experts, many writers consider their manuals to be collaboratively written. Writers do not have problems being open and accepting of input to the documentation. They solicit the help of others instead of writing in isolation. In fact, the most successful experience of the writers was working very closely with at least one other person. Writing collaboratively posed no unusual or insurmountable problems for writers, and it actually offered far more advantages than disadvantages.

The collaborative skills writers have are learned on the job and are not taught. There is a risk that some writers may never obtain the necessary skills to have rewarding and positive collaboration with team members. Cadence would benefit from creating training for new and experienced writers in how to collaborate with technical experts. The training should include how to gather information from technical experts. Teaching interviewing techniques and showing writers the best method of getting quick and detailed responses would benefit all writers. The training could also incorporate how and when to give feedback to the technical experts, how to incorporate and modify the information

received, and how to foster positive, lasting collaborative relationships. Instead of taking a chance that writers will eventually learn and use effective collaborative skills, Cadence could make sure writers are taught these skills.

Debs supports the idea of training writers in collaborative writing skills "as a way of introducing new writers to the organization's procedures and standards. . ." (248). In addition, Debs states that training in collaboration can improve "the status of the writers within the larger corporation and eventually [increase] their contribution to the total product design process" (248).

Not only could training in collaborative writing benefit writers at Cadence, but it could also benefit writers in other corporations. In any situation where writers deal with subject matter experts, there is necessarily collaboration. Writers would benefit from learning and practicing collaboration tactics such as how to ask questions, how to get desired information, and how to foster positive relationships.

Even with the constant interaction and collaboration with project team members, writers still hold the final responsibility for the documentation. Feedback on the documentation is given to the writers, not to technical experts. The manual is the writer's product, and this is what allows him or her to carry the title of Technical Writer.

Achieving Successful Collaboration in Industry

Research conducted on collaborative writing in industry shows that technical writers very often collaborate with others. The complex and highly technical products they document require them to gather and modify information from the technical experts who fully understand the product.

Although collaborative writing is commonplace among technical writers, there exists no single way of collaborating. Technical writers collaborate in different ways, in different stages, and with different people. With varying personalities, environments, and technologies, it is impossible to prescribe one best way to collaborate.

Social and organizational factors can influence and shape collaborative relationships. Power struggles can result when all people in the group have a say in decisions, not just the individual in the highest job position. Even the corporate environment itself can affect how collaboration is perceived and rewarded.

Even with the potential problems, the Cadence writers agree that collaboration is key to producing accurate documentation. All the writers I studied admitted that without direct interaction with the technical experts on their project teams, their manuals would suffer in technical accuracy and completeness. The advantages of collaboration far outweigh the few disadvantages.

The skills writers at Cadence use are based on trial-and-error and years of experience working with technical experts. There is no training in effective ways to collaborate, and writers are often not mentored in how to do this best.

Perhaps developing training in this area could improve collaborative relationships. Especially for new and inexperienced writers, this sort of training could teach effective approaches and tactics for gathering the necessary information from experts. After all, technical writers will learn, after only days on the job, that their documents are collaboratively composed with subject matter experts.

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Appendix A

First of all, let me say **thank you** for volunteering to be a subject in my case study. I really appreciate you taking the time to do this. I know I will learn a lot from your years of experience as a technical writer.

Writers at Cadence are members of product teams. Most often, there is only one technical writer on a product team. I am interested in studying how writers interact with other members of their team. Writers often rely on members of their product teams to supply technical information and review documentation (among other things).

Please answer the following questionnaire honestly and with as much detail as possible. If you do not understand any of the questions, please let me know.

If you write for more than one product, please answer the questions based on the product that causes you to interact the most with other team members. Answer all the questions based on your work with the *same* product.

Thanks again for your help. I appreciate it!

Kari

1. Please describe what product you write for and the type of documentation you are writing.

_____

_____

_____

_____

2. Please list each member of your product team and his or her job title.

_____

_____

_____

_____

3. Please outline the process you went through (or are going through) in producing your documentation.

_____

_____

_____

_____

_____

_____

_____

4. What member of your product team do you work with most often (Please give his or her job title)? What tasks do they perform for you?

_____

_____

_____

5. Are there any tasks you want product team members to perform, but they don't? Please specify.

_____

_____

_____

_____

6. How important are members of your product team in terms of producing documentation?

_____

_____

_____

7. Please list at what point(s) in your writing process you rely on members of your product team.

_____

_____

_____

_____

8. Please describe a time when you were most successful in working with members of your product team.

_____

_____

_____

_____

_____

9. How do you usually work with members of your product team?
    _____ Written discussions through email
    _____ Face-to-face interactions
    _____ In meetings
    _____ Phone calls
    _____ Other (Please specify _____)

10. What skills do you use when gathering necessary information from product team members?

_____

_____

_____

11. Collaboration can take many forms. In which of the following activities do you most often collaborate with others?
    _____ Planning the documentation
    _____ Writing the documentation
    _____ Revising the documentation
    _____ Other (Please specify _____)

12. What are the major advantages and disadvantages in collaborating with other members of your product team?

_____

_____

_____

_____

_____

13. What characterizes an excellent document produced by a team? A poor one?

_____
_____
_____
_____

14. Please describe an ideal product team member.

_____
_____
_____
_____

15. What is the most serious problem you have encountered when working with your product team?

_____
_____
_____

16. Please describe the most personally satisfying documentation you have been involved with. What other people were involved?

_____
_____
_____
_____
_____

17. If you were designing training for Cadence writers who need to interact with members of their product team, what would the training comprise?

_____
_____
_____
_____

18. What one factor most accounts for the effectiveness of the documentation you work on?

_____
_____

19. Do you consider the documentation for your product to be a collaborative effort? Why or why not?

_____
_____
_____
_____

20. Who most often makes decisions about the documentation for your product?

_____

_____

21. Have you ever received any training on how to interact with or gather information from others? If so, where did you receive the training?

_____

_____

22. Do all members of your product team review all documentation?

_____

23. Who most often accepts final responsibility for the written product.
    ____ Each member of the project team
    ____ You (as the technical writer)
    ____ Another individual of the team (who?_____)
    ____ Other (Please specify _____)

24. How often do you rely on your product team members when producing the documentation?

_____

_____

25. Please feel free to give me any additional comments about working with your project team.

Appendix B

Lee Berger's Responses

1. Products I write for:
   Vampire: Command language and graphic user interface used to verify logical and physical IC designs.

   InQuery: Graphic user interface used to analyze and identify IC design rule violations.

2. Team members:
   Dave Gariepy: R&D manager for Vampire
   Lynda Mason: IC Verification Marketing Director
   Michelle Meier: Technical Marketing manager
   Dick Winfrey: Applications Engineer
   Sue Beaufore: Applications Engineer
   Bill Landauer: QA
   Iris Chang: QA
   Lee Berger: Tech Pubs
   R&D Development staff (there are a lot them, do I need to list them all?)

3. For the first release, I adapted the functional specification maintained by Michelle Meier to write the Vampire Reference Manual. Michelle worked closely with R&D to make sure that the information in the spec was up to date.

   I usually get information about updates to the manual from the Management Project Review (MPR) meetings that Dave Gariepy presents to management once a month.

4. I work most often with Michelle and all of the R&D staff to gather information and get questions answered. Vampire is not being used much in the field yet, so help from AEs and other support staff is not as important yet.

5. My team is very cooperative. I can't think of anything, except to find me another good writer to hire.

6. Critical. I couldn't do the job very well without their help, because Vampire is a complex product that I couldn't figure out how to use on my own.

7. It's an ongoing process. I rely on the team throughout the release cycle, most importantly when I need review comments.

8. When I was writing the first version of the Vampire Reference Manual, Michelle copied the information from the manual into the functional spec. She also updated the spec with new information, which I then added to the manual. Both the manual and the spec were always current.

9. All of the ways you list, face-to-face most often. A lot of the complex concepts in Vampire are difficult to get across any other way.

10. Most often, I ask questions or interview people. Often the team tells me things that I need to know without my asking them.

11. Revising more than anything else.

12. The major advantage is that I'm accepted on a equal basis as part of the team and they cooperate and work with me. This is an experience that a lot of writers never get to have. I don't think that there are any disadvantages.

13. The most important thing is to involve the writer early in the life of the product. This way, problems can be addressed early before they grow in scope and become unmanageable. If the team doesn't involve the writer early and often, good documentation for the product will never happen.

14. One who listens to what I say and what I need. Is available to help out or to point me to someone else who can help.

15. Too many changes at the end of the release cycle and not enough time to incorporate them into the manual.

16. The most satisfying project that I've done was the Technology File User Guide. I developed a successful design and layout without much of a team to help me, which is what made it so satisfying. Jonathan Price, a pubs consultant we work with, was the most helpful. Ask me some time if you're interested in hearing more about what I did.

17. Teams need to realize how pubs fits in and why it's important. There isn't a single easy way to accomplish this. A lot of it depends on the personalities.

18. The team reads it and solicits feedback from the field and from customers.

19. Yes, for all the reasons I've mentioned earlier.

20. I do.

21. Not really. Just from experience.

22. About 2/3 of them do, some more often and better than others.

23. I do.

24. It depends. I rely on them mostly when I need review comments.

Ann Lukan's Responses

From: Ann Lukan <lukan>
To: karim

1. Technology File, Display Resource File User Guide, SKILL Reference,
   online help

2. Dan Guilin - R&D manager/project lead
   Rose Soto - QA
   Kimberly Turnbull - technical marketing
   Randy Bishop - architect/R&D

3. I. Review previous documentation (if any)
   II. Read specs and talk to people to get a sense of the product. Get
       current dates for the quarterly release this is planned for.
   III. Decide how to approach it, what docs/help you'll need to produce.
   IV. Make TOC-like outlines. If user guide type material, work with a
       member who knows the user to generate the task list.
   V. Write doc plan and initial schedule and distribute.
   VI. Start writing. Find the areas you feel most confident in and where
       the software is available first. Be ready to switch to another task
       if you hit a road block.
   VII. Update HRFs and test help as you go.
   VIII. Put chunks out for review and start on another section.
         Do initial SME review before putting out for large scale review.
   IX. Update doc plan if your plan changes significantly.
   X. Update and put chunks out for second reviews.
   XI. Index, review/update index, and put in final production

4. Randy Bishop is my SME (subject matter expert). I meet with him every two weeks or so for
2-4 hour sessions to go over the SKILL. We also exchange voice and e-mail 3-5 times a week.
He also gives me detailed reviews when I tell him I really need it. For the user guide I will
probably use Kimberly more.

5. I usually have to remind people that their review is very important. Even then, some don't do
it. I have the most trouble with SMEs outside our project team - Out of 6 R&D managers in
Preview, DLE, LAS, and LE, I got two reviews. Randy fills in the gaps when I tell him I need
help (he did DLE and LE for me).

6. They don't produce any documentation except specs. They are essential in providing technical
input that teaches me what to write.

7. Initially I work with people to determine scheduling and TOCs. Later I need them to teach me
and review my work. I basically rely on my teammates all the time.

8. I feel most successful when we solve problems together. If I have difficulty documenting
something (most recently the layers form, and currently the disparity in styles of UI for TF and

DRF) and raise the issue with my teammates, we usually sit down and redesign it. When the product is simplified and my job is then easier, I feel really satisfied.

9. I use all of the methods. I prefer face to face, but e-mail, v-mail, meetings and phone calls work when necessary. I walk downstairs frequently just to get a break from my desk.

10. Planning your questions is the best way to get in good with a team. When you put effort into figuring things out and present your questions that way, your teammates don't feel like they are carrying you. It's ok to be ignorant, but the more effort you put into figuring something out first, the more respect you'll get from your teammate, and the quicker they'll respond next time. And, if they are trying something out, they might just call you for advice, and it's really great being involved in the whole development, instead of hearing about it after.

11. I usually get input from one or the other of my teammates in all of those, with writing being the heaviest as far as interaction.   I still am in charge of the documentation, so I don't know if I'd call it collaboration. I get input and then decide what to do with it.

12. Advantages are 1) confidence in accuracy and that it can be understood. 2) keeps everyone involved as a team which means that I find out things that I wouldn't have if I weren't talking to them all the time. You can't expect everyone to remember to tell you things, it just doesn't happen that way. A disadvantage is that sometimes you have to rearrange your writing schedule to arrange a meeting with an SME. But it's usually worth it. On other teams I've been on, if I involved other people too much, they started feeling like they own the doc, so I just back off on them. You have to remain in charge of the doc or you'll become the kind of formatter/editor technical writers used to be.

13. Excellent documents are clean and straightforward. Introductions are small and well broken up with lists and task oriented section headings. Procedures are also small and well broken up. If you start writing long paragraphs or sections, either you don't understand the product well, or the software is too complicated.

14. An ideal team member does the following:
    o Communicates problems when they are found (not at next meeting)
    o Responds to requests quickly, or at least on time.
    o Knowledgable about product and project status.
    o And obviously, carries their share of the load.

15. No usability testing in planning stage. I found inconsistencies months ago, and we're just now getting into usability testing. I didn't lose time, I did the SKILL first instead of last, but if the UI changes a lot, my schedule might be sticky.

16. I just delivered 450 pages of new SKILL, and it feels great to get it out with such high confidence in accuracy. I hope I feel as good about the user guide!

17. Interview skills, product training, know your authoring environment, and get a teammate to mentor you. It's nice having one point of contact in R&D, it makes it a lot easier when they can't

tell you to go talk to someone else. I've always asked for one person, or been lucky and had one just be there for me. Randy was assigned that responsibility when we first started working together, and when I have an issue, he writes it down and finds out and copies me on the response. This works well because he usually needs to know the answer too.

18. All the members of my team want to put out a quality product, they care.

19. No. I write it. I collect input and confirm that how I interpret it is right, but it's my responsibility to produce the documentation. Of course, I don't think any of my team wants to share that responsibility, even if I did.

20. Me.

21. No, but by now I have 9 years of experience at this kind of job.

22. No.

23. Me.

24. A lot. If it's something I don't understand, hourly. If I've got it down, I can go 3 or 4 days without calling someone.

25. There's lots of different styles of writers. The kind I like best are the ones like me because I understand them. Cris and Linda infiltrate their product teams like I do, so we all work well together. Other people do it differently, and they achieve good results too. I don't think there's one right way, I think the natural personality of the writer should dictate how they approach this job.

I do know that several times when I first started with a team, I heard things like, "you mean you use the software", and "you know what that means?" after they've drifted into engineering-eze. I think it's hard on the tech pubs profession when writers don't get involved with the product. You don't have to read the code, but you have to understand what they are talking about to get what you need.

Suzanne Moore's Responses

From: Suzanne Moore <smoore>
To: karim

1. Please describe what product you write for and the type of documentation you are writing.

The project I am writing for is the System for Library Development (SLD), which is a software system used to create libraries for use in chip design activities.

I am writing the Design Automation User Guide, which is the guide that will be used by design automation developers to guide them in developing a library development solution specific to their design team needs.

The DA User Guide will contain SLD overview information, some detailed procedures for developing a library development solution, and will also contain reference information for SLDCheckPlus functionality, which is the verification aspect of SLD. Also, because the SLD product is really a process that involves many Cadence products, this guide will contain many references to other Cadence products and core tool documentation.

2. Please list each member of your product team and his or her job title.

The SLD team is the largest team I have ever worked with during my 8+ years as a technical writer. There are as many as 20 people on the team, including developers, quality assurance, integration, training and documentation, program managers, account managers, SMEs (subject matter experts), and managers. Part of the reason for the large group is that, as stated earlier, the SLD product is really a process that involves many Cadence products.

I have contact with all SLD team members, but because I am specifically focused on one aspect of the SLD product, my core team is a subset of the whole team. My team includes:

Me (Suzanne Moore)	Writer	San Jose
Ken Sax	Trainer, Doc. Mgr	San Jose
Dana Powers	Writer/Peer Review	San Jose
Rob Glover	Developer, Mgr.	San Jose
Colin Holehouse	Developer	UK
Sarkis Narkizian	Account Mgr.	San Jose
Janet Collyer	Account Mgr.	UK
Pranav Tiwari	CheckPlus Developer	India
Manu Lauria	"	India
Deepak Sabharwal	"	India

3. Please outline the process you went through (or are going through) in producing your documentation.

Mainly I have developed material from the following sources:

* Existing fspec. material for CheckPlus written by developers
* Product documentation for core SLD written by developers and SMEs
* Process documentation written by developers
* Overview documentation written by developers and SMEs
* Discussions with developers and SMEs

The process I follow to produce the documentation usually occurs as follows, with variations as needed:

1. Organize book to requirements
2. Pull material from existing documentation
3. Contact SMEs, developers, managers, etc. to point out holes and discrepancies and to determine delivery
   dates
4. Work with existing documentation (rewrite, edit, organize, format, etc.); continue to research holes;
   prepare files/chapters for review.
5. Send files out for reviews
6. Incorporate changes and discuss questions, discrepancies, etc. w/appropriate reviewers.
7. Repeat steps as needed.

In addition:
* Attend team meetings as needed
* Attend staff meetings to synch up with trainer/mgr and other writer.

4. What member of your product team do you work with most often (Please give his or her job title.) What tasks do they perform for you?

So far on this project I have worked most often and in about equal amounts with two lead developers of the project. The main tasks they have performed are 1) providing me with raw data and material with which to work, and 2) discussing my questions and comments about the material.

5. Are there any tasks you want product team members to perform, but they don't? Please specify.

So far I haven't had any problems in this area. The key is to be assertive and to set expectations correctly - if I do this I usually get what I want when I want it.

6. How important are members of your product team in terms of producing documentation?

Team members are crucial in terms of producing documentation. The most important team

members are the developers and SMEs, as they know the system well and provide crucial data such as functional
specifications. Without specifications and a final U/I it would be a monumental challenge to produce a book. Also, the developers and SMEs must be cooperative in being available to review documentation and answer questions.

7. Please list at what point(s) in your writing process you rely on members of your product team.

I usually rely on the team at the following points:

* Before first writing phase as suppliers of functional specs. and other misc. raw data and material
* During reviews as reviewers
* After each review for consultations on their feedback
* During index reviews as providers of synonyms

8. Describe a time when you were most successful in working with members of your product team.

For this project, my biggest success so far has been working with one of the developers on two of the chapters. This developer has been instrumental in writing preliminary material and reviewing my edits and organizational changes to his material. In addition, he was available to answer questions before and after he reviewed
the material. His willingness to cooperate and meat his commitments has been a real asset to my writing a quality book.

9. How do you usually work with members of your product team?

-- Written discussions through email
-- Face-to-face interactions
-- In meetings
-- Phone calls
-- Other (please specify)

I use all methods listed above. All work equally well if used under the right circumstances. I've listed below some of the factors that affect the method I choose:

 * Proximity to team member (while response times for email to India are slow, because of the time zone difference it is can be difficult to arrange a mutually agreeable time to talk on the phone)

 * Type of information being shared (for lengthy discussions it is often best to talk in person)

 * Time constraints/urgency for feedback, path to a file, etc.

10. What skills do you use when gathering necessary information from product team members?

* Assertiveness
* Clarity in expressing needs/setting clear expectations
* Setting manageable deadlines
* Follow-up; showing appreciation

11. Collaboration can take many forms. In which of the following activities do you most often collaborate with others?

-- Planning the documentation
-- Writing the documentation
-- Revising the documentation
-- Other (please specify)

I collaborate with other team members during all aspects of writing documentation, including planning, actual writing, and revising. While it is true that the writer has final control over a document, it would be silly and ineffective for me to exclude team members from offering their perspectives in each of these areas. While I
might not always use their input, the more input I receive the better handle I will have on the project.

12. What are the major advantages and disadvantages in collaborating with other members of your product team?

Advantages: See my response to question #11.
Disadvantages: See my response to question #15.

13. What characterizes an excellent document produced by a team? A poor one?

Excellent: Clear organization/technically accurate and complete - i.e. usable/reduces calls to support persons, written in audience's language; heavily reviewed by internal users; usable index

Poor: Ad hoc organization, unedited; lack of awareness of user's ability and education level; lack of reviews by internal users; no index
14. Describe an ideal product team member.

* Responsive to questions
* Available for consultations
* Available for reviews
* Provides meaningful, detailed feedback for reviews

15. What is the most serious problem you have encountered when working with your product team?

The most serious problem I have encountered in working with this project team is that there seems to be a lack of cohesiveness amongst the team members; therefore the communication is somewhat lacking and there are delays in deliverables. This makes it very difficult for team members to create schedules and set "real" deadlines, which in turn causes everyone to have expectations that are fuzzy/convoluted/dependent on too many other factors. This in turn affects the documentation process and makes it difficult for me to write documentation that I feel confident
is technically accurate and complete.

16. Describe the most personally satisfying documentation you have been involved with. What other people were involved?

N/A - project incomplete.

17. If you were designing training for Cadence writers who need to interact with members of their product team, what would the training comprise?

I think it's most important to understand individual differences, and I believe Cadence offers a class in this area. See my response to question #21 for more details.

18. What one factor most accounts for the effectiveness of the documentation you work on?

USABILITY, which is:
* Clear organization
* Technical accuracy and completeness
* Accurate and complete index

19. Do you consider the documentation for your product to be a collaborative effort? Why or why not?

Yes. See my response to question #11.

20. Who most often makes decisions about the documentation for your product.

See my response to question #11.

21. Have you ever received any training on how to interact with or gather information from others? If so, where did you receive the training?

I have not received any training specifically in the area of how to interact or gather information from others. A lot of the time my approach in dealing with others is based on common sense - look at the schedule and constraints, look at the individual from whom I am trying to extract material, and base my approach on a method that will be mutually agreeable for both that person and myself.

Also, I have attended the following workshops at Cadence, which have given me a few insights and tips on how best to interact with others:

* Writer Better Computer User Documentation, John Brockman
* Clear Writing Seminar, John Brogan; Task-Oriented User Guides, WordPlay
* Defining User Tasks, Comtech Services
* Moving Procedures and References Online, Jonathan Price
* Practical Usability Testing, Joann Hackos.

22. Do all members of your product team review all documentation?

Usually, program managers, management, and quality assurance folks do not review the documentation in detail. I would normally expect trainers, other writers on the project, developers, and SMEs to review the documentation in detail. Often, developers and SMEs will provide more detailed feedback on their areas of expertise.
Trainers and writers often provide the best feedback in the areas of organization, completeness, and technical accuracy, since they themselves are often documenting similar material or documenting the same material but in a different way.

23. Who most often accepts final responsibility for the written
product?

___ Each member of the project team
___ You (as the technical writer)
___ Another individual of the team (who?)
___ Other (please specify)

Please refer to my response to question #11.

24. How often do you rely on your product team members when producing the documentation?

Please refer to my response to question #7.

25. Please feel free to give me any additional comments about working with your project team.

:-)

Jenifer Renzel's Responses

1. Please describe what product you write for and the type of documentation you are writing.

I work on the Oasis project, which is new code that makes it much easier to integrate non-Cadence simulators into the analog artist environment. The book is called the Oasis Integrator's Guide, and it is like a user guide that outlines a start to finish process you must go through. (In some ways, that makes it like a tutorial!) I also work on the analog arti. Skill Refer manual, wr. documents func. that let you modify the artist environment. These two books are related — yo need the Sk. reference because it fully explain all the functi. used in OASIS.

2. Please list each member of your product team and his or her job title.

Tina Najibi - Project lead and developer / Vance - developer / Yeganeh Niroomand-Rad — QA / Steve Lewis - marketing / Bill Nye - developer / C.R. Shyamsunder - developer / Me! - writer

3. Please outline the process you went through (or are going through) in producing your documentation. ⊗ — see bottom of page

— Meet with project lead to introduce myself and start things on the right foot

— Collect any source material (drafts of chapters, functional specs, any notes, etc.

— Create doc plan which includes schedule and an outline of the planned content of the book — distribute plan to all members of the team including pubs contacts like Marilyn.

R SIDE ⊗

4. What member of your product team do you work with most often (Please give his or her job title)? What tasks do they perform for you?

I work the most w/ Tina and Vance. They answer my questions, explain concepts, and review new sections before I send them out for formal review.

5. Are there any tasks you want product team members to perform, but they don't? Please specify.

Some team members that aren't a "core" part of the team don't review the documentation. I have to hunt them down and find out why.

6. How important are members of your product team in terms of producing documentation?

Extremely important. If my team didn't support me and answer my questions, my books would be garbage! They might be well written, but the technical content would be lacking.

I should mention that OASIS and Artist SKILL are programming books that don't deal with any UI. Usually, a writer would look at the UI (when it became stable) as part of the process for understanding / documenting a product — this is late in the process though.

✳ —Following the plan, begin working on drafts of the material, For a new book, I would write one or two chapters, then send them out for review

— Incorporate review comments for initial chapters (with frequent meetings w/ reviewers to clean up questions and ambiguity). Use change bars so new/changed material is flagged.

— Continue writing blocks of chapters and sending them to review

— after all material has been reviewed once, send the whole book out for a second review.

— Incorporate review comments, clear up last minute questions. Make last minute changes that developers need (You're supposed to be done with changes long before this, but often the reality is different)

— Send doc to final production and signoff

— Prepare files for online viewer.

7. Please list at what point(s) in your writing process you rely on members of your product team.

— At the beginning/planning stage. I need my team to help me get up to speed on the project
— When I'm writing new sections (for questions)
— When I send material to review (to review it!)

8. Please describe a time when you were most successful in working with members of your product team.

By being a watch dog, I have helped ensure that some important sections made it into Oasis and Artist SKILL. The developers are often too busy to pay much attention to schedules, so I prompted them with polite reminders. Eventually, they provided me with the necessary input and I was able to add the sections. The developers were grateful and I felt pretty good.

9. How do you usually work with members of your product team?

- **✓** Written discussions through email *often*
- **✓** Face-to-face interactions
- **✓** In meetings *very rarely*
- **✓** Phone calls
- ___ Other (Please specify _____)

10. What skills do you use when gathering necessary information from product team members?

I am patient. I am careful not to criticize their written materials if they are unclear. I think diplomacy and tact are crucial. I also try to figure out what sort of approach works best for the individual — some people like

11. Collaboration can take many forms. In which of the following activities do you most often collaborate with others? *if you just drop by, others need to be forewarned*

- ___ Planning the documentation
- **✓** Writing the documentation
- ___ Revising the documentation
- ___ Other (Please specify _____)

12. What are the major advantages and disadvantages in collaborating with other members of your product team?

You have lots of reality checks for your material, and you have lots of people that you can ask questions. You feel like part of a team with a common goal. On the downside, you might get conflicting ideas or conflicting review comments.

13. What characterizes an excellent document produced by a team? A poor one?

An excellent document is complete, technically accurate, and clear. Poor docs are incomplete, or even intentionally vague to hide the fact that the writer doesn't really understand the material. Another characteristic of a poor doc is that it is disjointed — its overall structure isn't clear.

14. Please describe an ideal product team member.

Ideal team members are responsive and flexible. They recognize that all team members are important to the success of the project, so they treat all members with respect. They enjoy working with people.

15. What is the most serious problem you have encountered when working with your product team?

I have had some encounters with problem members who are flip/rude. I also know that a common problem is that sometimes the team can be R and D - centric, and pubs and QA might be thought of as less important. This makes harder to get team support.

16. Please describe the most personally satisfying documentation you have been involved with. What other people were involved?

OASIS, because the team is wonderful and it is a new book. I feel that I have contributed to improving the OASIS product by working (hard) on the documentation.

17. If you were designing training for Cadence writers who need to interact with members of their product team, what would the training comprise?

*— How to provide feedback in a nonjudgmental way
— Personal accountability = taking responsibility for your part of a project and the project as a whole
— Communication skills — verbal and written*

18. What one factor most accounts for the effectiveness of the documentation you work on?

The quality and usability of the product on which it is based. I say this because there are so many factors, yet if the actual product is confusing and unclear, the documentation will necessarily be confusing and unclear.

19. Do you consider the documentation for your product to be a collaborative effort? Why or why not?

Yes. R and D wrote some of the material, which I then edited (rewrote). I wrote the rest of the material, which R and D and QA reviewed (heavily.) During these processes, there was a free flow of communication of ideas/concerns back and forth.

20. Who most often makes decisions about the documentation for your product?

Me, but I always consult my team leader, other team members, and my boss (writing group manager) on really big decisions.

21. Have you ever received any training on how to interact with or gather information from others? If so, where did you receive the training?

I received some training from my mentor, Ed Hea.

22. Do all members of your product team review all documentation?

No. Some of the non-core members don't review the material

23. Who most often accepts final responsibility for the written product.

__2__ Each member of the project team → _Me first, team second. (This is just my opinion)_
__1__ You (as the technical writer) →
____ Another individual of the team (who?_____)
____ Other (Please specify _____)

24. How often do you rely on your product team members when producing the documentation?

I have questions for different members on a weekly basis. I rely on them heavily during writing stage for new material and during review cycles.

25. Please feel free to give me any additional comments about working with your project team.

— _Cadence strongly supports the idea of product teams, so the corporate environment is built on teamwork (Boy, I sound like a goob...)_

— _I think that being part of a product team is the best way for writers to get the support they need from R and D._

— _One great thing about my team is that we have good customer contacts for feedback. I am actually using customer review comments for my docs._